Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A defect data analysis method comprising the steps of:

obtaining defect position information by inspecting a substrate with an inspection apparatus, wherein the substrate is processed in a process of circuit pattern formation on the substrate;

storing the obtained defect position information in memory;

processing the defect position information stored in the memory using a processor;

obtaining a defect distribution pattern on a wafer map from the processed defect position information, the defect distribution pattern representing a placement state of a plurality of defects on the wafer map; ~~showing a distribution shape of defects from the processed defect position information;~~

classifying the obtained defect distribution pattern ~~shape of defects~~ on the wafer map into one of a plurality of ~~distribution shape characteristic~~ regional defect categories by using a defect distribution ~~shape~~ pattern classifier and the processed defect position information, wherein the plurality of ~~distribution shape characteristic~~ regional defect categories comprises: repeated defects, clustered defects, arc-shaped regional defects, radial regional defects, line type regional defects, ring and blob type regional defects and random defects; and

displaying, on a display screen, ~~the classified distribution shape of defects on the wafer map~~ the classified defect distribution pattern relative to the wafer map, wherein the ~~distribution shape characteristic~~ regional defect categories are each displayed using different colors.

2. (Previously presented) A defect data analysis method as claimed in claim 1, further comprising:

detecting the arc-shaped regional defects by obtaining a center candidate point of the distribution of defects on Cartesian coordinates and extracting the arc-shaped regional defects from corresponding polar coordinate information using the center candidate point as an origin.

3. (Previously presented) A defect data analysis method as claimed in claim 2, wherein the center candidate point of the distribution of defects is a point having more intersections of perpendicular bisectors of straight lines connecting two arbitrary defects among the defects distributed on the processed substrate.

4. (Original) A defect data analysis method as claimed in claim 1, wherein the defects classified into the arc-shaped regional defects are judged to be scratches generated by CMP (chemical mechanical polishing).

5. (Previously presented) A defect data analysis method as claimed in claim 1, wherein the radial regional defects are detected by creating distribution data on a $\rho\ \theta$ space based on information associated with the defects distributed on the processed substrate on Cartesian coordinate space and extracting the radial regional defects from the distribution data on the $\rho\ \theta$ space.

6. (Previously presented) A defect data analysis method as claimed in claim 5, further comprising:

converting the information associated with the defects distributed on the processed substrate on the Cartesian coordinate space into the defect position information on the polar coordinate space by using:

a distance between a straight line connecting two arbitrary defects on the processed substrate and an origin of the Cartesian coordinate space, and

an angle defined by an X axis and a perpendicular drawn from the origin of the Cartesian coordinate space to a straight line connecting two arbitrary defects.

7. (Currently amended) A defect data analysis method comprising the steps of:

obtaining defect distribution information on a processed substrate from defect position information~~, wherein the defect position information is~~ obtained by inspecting the processed substrate with an inspection apparatus, the substrate being processed in a process for forming a circuit pattern on the substrate;

storing the obtained defect distribution information in memory;

processing the stored defect distribution information using a processor to obtain a defect distribution pattern representing a placement state of a plurality of defects on a wafer map;

~~obtaining a wafer map showing a distribution shape of defects from the processed defect distribution information;~~

identifying a repeated defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the repeated defect comprises ~~are~~ defects which are distributed on the substrate in a repeated pattern;

identifying a clustered defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the clustered defect comprises ~~are~~ defects which are distributed on the substrate in a cluster;

identifying an arc-shaped regional defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the arc-shaped regional defect comprises ~~are~~ defects which are distributed on the substrate in an arc-shape;

identifying a radial regional defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the radial regional defect comprises ~~are~~ defects which are radially distributed on the substrate;

identifying a line type regional defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the line type regional defect comprises ~~are~~ defects which are linearly distributed on the substrate;

identifying ring and blob type regional defect in the defect distribution pattern ~~s~~ by using the wafer map, wherein the ring and blob type regional defects ~~are~~ comprise defects which are distributed on the substrate in a ring and blob shape;

identifying a random defect in the defect distribution pattern s by using the wafer map, wherein the random defect comprises ~~are~~ defects which are randomly distributed on the substrate;

classifying the identified defects using the processor into corresponding regional defect categories; and

~~processing information associated with the identified defects using the processor, wherein the information is processed to classify differently identified defects into different defect distribution categories; and~~

displaying the processed information on the wafer map displayed on a display screen, wherein the processed information is displayed such that the different regional defect ~~distribution~~ categories are displayed using different colors.

8. (Canceled)

9. (Previously presented) A defect data analysis method as claimed in claim 7, wherein the arc-shaped regional defects and the radial regional defects are identified using defect polar coordinate information created according to the obtained defect distribution information.

10. (Previously presented) A defect data analysis method comprising the steps of:

creating a wafer map showing positions of defects on a coordinate system based on a wafer origin reference according to defect data including at least a defect position coordinate table of defects obtained by inspecting a processed substrate with an inspection apparatus, wherein the substrate is processed by forming a circuit pattern on the substrate;

storing the wafer map in memory; and

processing the wafer map stored in the memory using a processor, wherein processing the wafer map comprises:

weighting a point where a perpendicular of two arbitrary defects from the wafer map passes according to a distance between the two arbitrary defects,

voting the point onto Cartesian coordinate space,

detecting Cartesian coordinates corresponding to a maximum value on the voted space,

polar-coordinate-converting the wafer map onto rθ space using the detected Cartesian coordinates as an origin, and

identifying an arc-shaped regional defect according to a horizontal segment detected in a polar coordinate converted state.

11. (Previously presented) A defect data analysis method comprising the steps of:

creating a wafer map showing positions of defects on a coordinate system based on a wafer origin reference according to defect data including at least a defect position coordinate table of defects obtained by inspecting a processed substrate with an inspection apparatus, wherein the substrate is processed by forming a circuit pattern on the substrate;

storing the wafer map in memory; and

processing the wafer map stored in the memory using a processor, wherein processing the wafer map comprises:

weighting ρ, θ coordinates corresponding to a segment connecting two arbitrary defects from the wafer map according to a distance between the two arbitrary defects,

voting the ρ, θ coordinates,

detecting a plurality of peaks on the voted coordinates, and

when concentration of voting to a predetermined range around ρ=0 exceeds a predetermined threshold value, identifying a radial regional defect according to the peaks in the range.

12. (Currently amended) A defect data analysis apparatus comprising:

input means for inputting defect position information obtained by inspecting a processed substrate, wherein the substrate is processed by forming a circuit pattern on the substrate;

defect distribution calculation means for obtaining a defect distribution pattern on a wafer map ~~showing a distribution shape of defects on the processed substrate~~ from the defect position information, the defect distribution pattern representing a placement state of a plurality of defects on a wafer map;

regional defect distribution ~~shape characteristic category~~ classification means for classifying the defect distribution pattern ~~distribution shape of defects on the wafer map~~ to one of a plurality of regional defect categories comprising: ~~distribution shape characteristic categories comprising:~~ repeated defects, clustered defects, arc-shaped regional defects, radial regional defects, line type regional defects, ring and blob type regional defects, and random defects, wherein the classifying is performed based on the defect position information; and

output means for outputting the classified defect distribution pattern relative to the wafer map, ~~distribution shape of defects on the wafer map~~.

13. (Previously presented) A defect data analysis apparatus as claimed in claim 12, wherein the output means includes a display section for displaying the classified distribution shape of defects on the wafer map, wherein the distribution shape characteristic categories are each displayed.

14. (Currently amended) A review system comprising:

an inspection apparatus for scanning a surface of a processed substrate by light or electronic beam to detect a foreign matter or a pattern defect on the processed substrate and outputting defect data comprising at least position coordinates of the detected foreign matter or the pattern defect; and

a defect data analysis apparatus for obtaining a defect distribution pattern on a wafer map ~~showing a defect distribution shape characteristic~~ using the position coordinates, the defect distribution pattern representing a placement state of a plurality of defects on the wafer map, and for classifying the defect distribution pattern ~~distribution shape characteristic on the wafer map~~ into one of a plurality of regional defect ~~distribution shape characteristic~~ categories, wherein the plurality of regional defect ~~distribution shape characteristic~~ categories comprises:

repeated defects, clustered defects, arc-shaped regional defects, radial regional defects, line type regional defects, ring and blob type regional defects, and random defects,

wherein an image of the defect distribution pattern ~~shape characteristic~~ is acquired by the light or the electron beam.

15. (Currently amended) A review system as claimed in claim 14, wherein the defect data analysis apparatus creates a report including the classified regional defect categories. ~~distribution shape characteristic.~~

16. (New) The defect data analysis method of claim 1, wherein the step of obtaining a defect distribution pattern comprises obtaining a distance between defects, a defect density, and an indication of whether at least two of the defects are located on a line expressed by parameters from the processed defect position information.

17. (New) The defect data analysis method of claim 7, wherein the step of obtaining a wafer map showing a defect distribution pattern from the processed defect distribution information comprises obtaining a distance between defects, a defect density, and an indication of whether at least two of the defects are located on a line expressed by parameters from the processed defect position information.